



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,558	11/24/2003	David M. Lowe	2003B124	4856

23455 7590 06/13/2005

EXXONMOBIL CHEMICAL COMPANY
5200 BAYWAY DRIVE
P.O. BOX 2149
BAYTOWN, TX 77522-2149

EXAMINER

HAILEY, PATRICIA L

ART UNIT	PAPER NUMBER
----------	--------------

1755

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,558

Applicant(s)

LOWE ET AL

Examiner

Patricia L. Hailey

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) 54-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Applicants' remarks and amendments, filed on March 30, 2005, have been carefully considered. No claims have been canceled or added; claims 1-62 remain pending in this application.

Election/Restrictions

1. Claims 54-62 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected process for selectively removing alkynes or diolefins from a feedstock also containing olefins, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on October 14, 2004.

Withdrawn Objections and Rejections

The objection to the Specification for having informalities is withdrawn in view of Applicants' insertion of the copending Application Serial Numbers.

The provisional obviousness-type double patenting rejection of claims 6-18, 42, 52, and 53 as being unpatentable over claims 1, 5-13, 18-38, 44, and 45 of copending Application Serial No. 10/720, 607 has been withdrawn in view of the Terminal Disclaimer filed by Applicants on March 30, 2005.

Maintained Rejections

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. *Claims 1-5 stand rejected under 35 U.S.C. 102(e) as being anticipated by Uzio et al. (U. S. Patent No. 6,498,280).*

Uzio et al. teach a catalyst comprising at least one support, at least one element from Groups 8, 9, or 10 of the Periodic Table, at least one element from Group 14 of the Periodic Table, at least one element from Group 13 of the Periodic Table, and at least one alkali or alkaline earth metal, and, optionally, at least one halogen. See col. 4, lines 8-14 of Uzio et al.

Examples of Groups 8, 9, or 10 metals include rhodium, ruthenium, iron, and cobalt. Although platinum is preferred, the selected metal(s) from these groups is present in the catalyst in amounts ranging from 0.01% to 5% by weight with respect to the total catalyst weight. See col. 4, lines 15-21 of Uzio et al.

The Group 14 element (tin, germanium, lead) is present in an amount ranging from 0.01% to 5% by weight relative to the total catalyst weight. See col. 4, lines 20-25 of Uzio et al.

The Group 13 metal is selected from indium, gallium, and thallium, preferably indium, and is present in amounts ranging from 0.005% to 3% by weight relative to the total weight of the catalyst. See col. 4, lines 26-29 of Uzio et al.

Examples of the support include aluminas. See col. 4, lines 42-80 of Uzio et al.

In view of these teachings, Uzio et al. anticipate claims 1-5.

Claim Rejections - 35 USC § 103

4. *Claims 6-45 and 47-52 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Uzio et al. (U. S. Patent No. 6,498,280).*

Uzio et al. teach a catalyst comprising at least one support, at least one element from Groups 8, 9, or 10 of the Periodic Table, at least one element from Group 14 of the Periodic Table, at least one element from Group 13 of the Periodic Table, and at least one alkali or alkaline earth metal, and, optionally, at least one halogen. See col. 4, lines 8-14 of Uzio et al.

Examples of Groups 8, 9, or 10 metals include rhodium, ruthenium, iron, and cobalt. Although platinum is preferred, the selected metal(s) from these groups is present in the catalyst in amounts ranging from 0.01% to 5% by weight with respect to the total catalyst weight. See col. 4, lines 15-21 of Uzio et al.

The Group 14 element (tin, germanium, lead) is present in an amount ranging from 0.01% to 5% by weight relative to the total catalyst weight. See col. 4, lines 20-25 of Uzio et al.

The Group 13 metal is selected from indium, gallium, and thallium, preferably indium, and is present in amounts ranging from 0.005% to 3% by weight relative to the total weight of the catalyst. See col. 4, lines 26-29 of Uzio et al.

Examples of the support include aluminas. See col. 4, lines 42-80 of Uzio et al.

Patentees' catalyst can be prepared by successive steps of depositing the metals, using any technique known in the art. These deposition steps can be performed in any order. Deposition can be performed by dry or excess impregnation, or by an ion exchange method. Calcining can be performed at temperatures of about 500°C. See col. 4, lines 52-64 of Uzio et al.

The metals can be deposited using any known precursors that are soluble in an aqueous medium; for the alkali and Groups 13 and 14 metals, decomposable salts such as nitrates can be employed. See col. 5, lines 34-45 of Uzio et al.

Uzio et al. do not teach the specifically claimed combinations of Applicants' catalyst compositions, e.g., of a first component comprising rhodium, a second component comprising a metal other than rhodium and selected from Groups 1-15. However, because this reference teaches a catalyst comprising metal components corresponding to those respectively claimed, as well as percentage amounts of these components that are numerically within the respectively claimed percentage ranges, one of ordinary skill in the art finds amply motivation in selecting the metals disclosed in Uzio et al. to readily obtain Applicants' claimed invention.

1. *Claims 1-45 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shepherd et al. (U. S. Patent No. 6,503,866).*

Shepherd et al. teach a catalyst comprising an alumina support (col. 3, line 7 to col. 4, line 4), and a platinum group component (e.g., ruthenium, rhodium) present in catalytically effective amounts, e.g., from about 0.01 to about 2 mass % of the final catalyst. The platinum group component may be incorporated into the alumina support in any suitable manner, such as coprecipitation, ion exchange, or impregnation, and may be provided by compounds such as rhodium nitrate. See col. 4, lines 8-61 of Shepherd et al.

The catalyst may also contain a Group IVA (Group 14) metal component such as germanium and tin, in amounts ranging from about 0.01 to about 5 mass %. See col. 5, lines 7/58 of Shepherd et al.

Optionally, the catalyst may contain other components or mixtures thereof which act alone or in concert as catalyst modifiers to improve activity, selectivity, or stability. Examples of these components include rhenium, gallium, indium, nickel, iron, tungsten, molybdenum, zinc, and cadmium. Catalytically effective amounts of these components may be added in any suitable manner to the carrier material during or after its preparation, or to the catalytic composite before, while, or after other components are being incorporated. Amounts of these components range from about 0.01 to about 5 mass % of the composite. See col. 5, line 59 to col. 6, line 4 of Shepherd et al. This

disclosure is considered to read upon Applicants' claim limitations regarding the metal components Groups 8-10 and 1-15 of the Periodic Table, as recited in the instant claims.

In the preparation of the catalyst, following the incorporation of the desired components with the alumina support, a calcination step is employed. Calcination typically takes place at a temperature of from about 370°C to about 600°C. See col. 6, lines 21-42 of Shepherd et al., as well as col. 7, lines 9-39.

Also, a reduction step is employed. Reduction conditions include a temperature of from about 315°C to about 650°C. See col. 7, lines 40-64 of Shepherd et al., especially lines 50-56.

Shepherd et al. do not teach the specifically claimed combinations of Applicants' catalyst compositions, e.g., of a first component comprising rhodium, a second component comprising a metal other than rhodium and selected from Groups 1-15. However, because this reference teaches a catalyst comprising metal components corresponding to those respectively claimed, as well as percentage amounts of these components that are numerically within the respectively claimed percentage ranges, one of ordinary skill in the art finds ample motivation in selecting the metals disclosed in Shepherd et al. to readily obtain Applicants' claimed invention.

Response to Arguments

In response to Applicants' arguments that Uzio et al. disclose a dehydrogenation catalyst that encompasses "over 300 possible combinations of metals excluding the

added variables of which support is used and whether and which halogen is used", it is the Examiner's position that only the prior art's combinations—and their respective percentage ranges--closest to Applicants' claimed invention need be selected. Also, in response to Applicants' argument that one skilled in the art would not look to Uzio et al., which describes a dehydrogenation catalyst, in attempting to develop a superior hydrogenation catalyst, it is the Examiner's position that Applicants' claims in their present form are merely directed to a "catalyst composition", which is considered to read upon catalysts exhibiting any of a variety of intended uses, not just what usefulness Applicants allege their inventive catalyst to exhibit.

With respect to Uzio et al., the fact that this reference discloses what Applicants refer to as a "laundry list" does not require the skilled artisan to visit every item on the list; just those that are also present in Applicants' claims.

As for Applicants' arguments regarding the Shepherd et al. reference, the Examiner's statements regarding Uzio et al. apply here, also—only the prior art's combinations—and their respective percentage ranges—closest to Applicants' claimed invention need be selected.

In response to Applicants' arguments that neither reference is directed to the hydrogenation of alkynes and diolefins in an olefin stream, the Examiner states that the references were relied upon for their teachings regarding the catalyst compositions disclosed therein and their relevance to the instantly claimed catalysts. In a component-to-component comparison of the references and the instant claims, one skilled in the art

would readily deduce that the prior art reads on Applicants' instant claims, regardless of what properties or characteristics Applicants allege the claimed catalyst exhibits.

2. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For these reasons, Applicants' arguments are not persuasive.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date

Art Unit: 1755

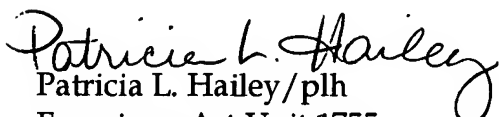
of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

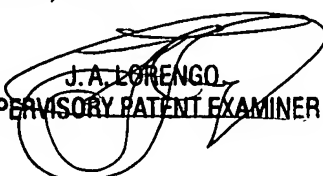
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Patricia L. Hailey/plh
Examiner, Art Unit 1755
June 6, 2005


J. A. LORENGO
SUPERVISORY PATENT EXAMINER